



AMENDMENTS TO THE CLAIMS

The following listing of claims supersedes all previous versions of claims in the application:

1. (Currently Amended) A method for extending the life of a power supply that supplies power to a motor in a power tool, comprising:

~~using a pulse width modulation controller to supply~~supplying voltage pulses of an initial width to the motor using pulse width modulation;

comparing a motor current generated due to the supplied voltage pulses to at least one of three different thresholds; and

changing the pulse width from the initial width to an alternative width if a condition concerning a current associated with the motor is met one of zero, a first alternative pulse width and a second alternative pulse width based on the comparison to a given threshold.

2. (Canceled)

3. (Currently Amended) The method of claim 21, wherein the alternative width is shortened.

4. (Canceled)

5. (Currently Amended) The method of claim 4-1, wherein the alternative width is lengthened.

- 6-12. (Canceled)

13. (Currently Amended) A power tool, comprising:
 - a housing;
 - a power supply disposed within the housing and including a plurality of lithium ion batteries;
 - a motor disposed within the housing, ~~the motor and~~ providing torque ~~for~~to the power tool; and
 - a pulse width modulation controller ~~disposed~~ within the housing for determining varying the amount of current pulse width of voltage pulses supplied ~~from the power supply~~ to the motor based on a comparison of the motor current to one of at least three different thresholds.
14. (Currently Amended) The power tool of claim 13, wherein the ~~power supply includes a battery~~ lithium ion batteries are rechargeable.
15. (Original) The power tool of claim 13, wherein the pulse modulation controller includes a switch that supplies current to the motor when the switch is turned on.
16. (Original) The power tool of claim 15, wherein the pulse modulation controller further includes a microprocessor that turns the switch on and off.
17. (Original) The power tool of claim 16, wherein the pulse modulation controller further includes voltage measuring circuitry to determine a turn on time for the switch.

18. (Original) The power tool of claim 17, wherein the voltage measuring circuitry measures battery voltage and motor voltage.

19. (Original) The power tool of claim 18, wherein power tool further includes circuitry for speed control.

20. (Original) The power tool of claim 19, wherein the circuitry for speed control includes a potentiometer.

21. (Original) The power tool of claim 20, wherein the voltage measuring circuitry further measures a voltage across the potentiometer.

22. (Original) The power tool of claim 15, wherein the pulse width modulation circuit further includes a ramp generator that provides a ramp signal.

23. (Original) The power tool of claim 22, wherein the pulse width modulation circuit further includes a comparator that compares the ramp signal to a measured motor voltage to determine the pulse width modulation waveform.

24. (Currently Amended) An apparatus for limiting current to a load, comprising:
means for supplying power;
means for providing torque to a load; and

means for switchably supplying power to the means for providing torque from the means for supplying power, the means for switchably supplying power being actuated according to a pulse width modulation technique; and

means for controlling the means for switchably supplying power based on a comparison of current generated in the apparatus to one of at least three different thresholds.

25-27. (Canceled)

28. (Currently Amended) The apparatus of claim ~~27~~ 24, wherein the means for supplying power includes lithium ion batteries.

29. (Original) The apparatus of claim 28, wherein the means for supplying power provides a direct voltage between 30 and 40 volts.